REMARKS/ARGUMENTS

Claims 1-7, 8-20, 28 and 29 are pending. Claims 21-27 were withdrawn pursuant to a restriction requirement. Claims 1-7, 8-20, 28 and 29. Claims 1, 7, 10-13, 17 and 29 are amended.

RESTRICTION REQUIREMENT

In response to the restriction requirement set forth in the April 28, 2008 Office Action, Applicants hereby provisionally elect Group I, Claims 1-7, 9-20, 28 and 29 drawn to a particle injector. This election is made with traverse.

Unity of invention practice applies to this national phase application. As noted in MPEP 1850:

> [T]he requirement of unity of invention referred to in [PCT] Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

Group II comprises Claims 21-27, drawn to a microfluidic system incorporating the particle injector of Claim 1. A special technical feature shared by the claims of Groups I and II is the novel particle injector of Claim 1. Contrary to the Examiner's assertion, Claim 1, as amended herein, is not disclosed or suggested in the prior art. Claim 1 requires that "the injection channel has a feeding-in aid for an injection needle." This element was previously part of Claim 11, which depended from Claim 1 and which was a part of Group I. Contrary to the Examiner's assertion, none of the art of record discloses or suggests the particle injector of Claim 1 including a feeding-in aid. This is explained more fully in the remarks below.

Thus, claims 1-7 and 9-29 all share special technical features of Claim 1—the feeding-in aid—and should not be restricted into Groups I and II.

Accordingly, reconsideration and withdrawal of the restriction requirement are respectfully requested.

CLAIM REJECTIONS 35 USC §112

The Examiner has rejected Claims 7, 10 and 17 under 35 USC §112 second paragraph. Claim 7, 10 and 17 have been amended to particularly point out and distinctly claim the subject matter claimed as the invention. Accordingly, reconsideration and withdrawal of the §112 rejections of Claim 7, 10 and 17 are respectfully requested.

CLAIM REJECTIONS UNDER 35 USC §§ 102, 103

The Examiner has rejected Claims 1-4, 7, 9, 10, 14-18, 20 and 29 under §102(b) as anticipated by U.S. Patent Application Publication No. 20030040105 ("Sklar").

The Examiner has rejected Claims 1, 5, 6, and 28 under §102(b) as anticipated by U.S. Patent No. 5,138,181 ("Lefevre").

The Examiner has rejected Claim 19 under §103(a) as unpatentable over Sklar in view of non-patent literature: Muller et al., "A 3D micro electrode system for handling and caging single cells and particles", Biosensors & Bioelectronics 14 (1999), pp. 247-56.

The Examiner has rejected Claims 11-13 under §103(a) as unpatentable over Sklar in view of U.S. Patent no. 5,489,506 ("Crane").

Claim 1 currently states:

A particle injector for introducing particles into a carrier flow of a

> microfluidic system, comprising: at least one inlet for receiving the carrier flow, at least one outlet for discharging the carrier flow with the introduced particles, at least one carrier flow channel, connecting the inlet to the outlet, wherein the carrier flow channel has substantially no dead volume and at least one injection channel terminating in the carrier flow channel for introducing the particles into the carrier flow, wherein the injection channel has a feeding-in aid for an injection needle.

The Examiner has admitted that Sklar does not disclose a particle injector where the injection channel has a feeding-in aid for an injection needle. Lefevre does not disclose a feeding-in aid. The Examiner asserts that Crane discloses this feature and that it would have been obvious to combine Crane with Sklar. The applicants respectfully disagree.

A feeding-in aid for an injection needle is something to aid insertion of the needle into the particle injector, not simply make it possible to insert a needle into the injector, but to aid that insertion, making it easier than if the aid was not in place. The aiding of the insertion of the needle is further evident in Claims 12 and 13, which depend from Claim 1, in that these claims state a funnel-shaped opening that provides a larger area for the needle to be inserted than the area of the channel diameter.

Crane does not disclose a feeding-in aid for an injection needle, but merely a septum that makes insertion of a needle into a chamber possible, but which does nothing to aid insertion of the needle. (Fig. 2 Col. 5, lines 51-61). In addition, there would have been no motivation to combine the septum of Crane with the mixing apparatus of Sklar. The apparatus of Sklar has three ports all of equal diameter, and no dead volume spaces. Sklar, ¶[0111]. Crane does not disclose a carrier flow channel with no dead volume. There is a large chamber 44 into which the needle is inserted. Such a chamber is not consistent with the design of Sklar. Because the

chamber in Crane is large with respect to the needle, there is no need to have a feeding-in aid as stated in Claim 1, but the design of Sklar precludes such a large chamber. Thus, there is no motivation to combine the septum of Crane with the mixing apparatus of Sklar.

In view of these points, Claim 1 is believed to be allowable over the cited references. The remaining rejected claims 2-7, 9-20, 28 and 29 each depend from Claim 1 and are allowable for at least the reasons stated with respect to Claim 1.

The Examiner has also rejected, based on Crane, Claims 12 and 13, which state that the feeding-in aid has a funnel-shaped cross section. The septum 42 of Crane does not have a funnel-shaped cross section. See Fig. 2. The Examiner pointed to item 38, but this is not part of the apparatus to accept the needle 40, rather it is part of the needle itself. A needle with a funnel-shaped top has no relationship to a funnel-shaped feeding-in aid for accepting a needle. For this reason, Claims 12 and 13 are allowable in addition to the reasons stated for Claim 1, from which they depend/

Conclusion

In view of the foregoing remarks, the applicants respectfully submit that the Examiner's rejections have been overcome, and that the application, including Claims 1-7, 9-20, 28 and 29 is in condition for allowance. Reconsideration and withdrawal of the Examiner's rejections and an early Notice of Allowance are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for initial examination and allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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August 13, 2008

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Please charge or credit our Account No. 03-0075 as necessary to effect entry and/or ensure consideration of this submission.